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Please amend the claims as follows:

1. (Currently Amended) An apparatus for electrolytic purification of brackish water, said apparatus comprising:

a photovoltaic device, said photovoltaic device converting solar energy to electricity, said photovoltaic device comprising at least one triple junction solar cell;

an anode in electrical communication with said photovoltaic device and said anode in contact with said brackish water,

a cathode in electrical communication with said photovoltaic device and said a cathode in contact with said brackish water, said solar energy causing the generation of an electric potential between said anode and said cathode; said electrical potential inducing a water splitting reaction of said brackish water, said water splitting reaction producing hydrogen gas and oxygen gas, said hydrogen gas and said oxygen gas evolving from said brackish water; and

a reaction chamber, said reaction chamber receiving said hydrogen gas and said oxygen gas, said hydrogen gas and said oxygen gas reacting spontaneously in said reaction chamber to form water[.].;

said apparatus further comprising a hydrogen purification system, said hydrogen purification system comprising:

a gas receiving chamber adapted to receive a gaseous stream of impure hydrogen, said gaseous stream of impure hydrogen comprising said hydrogen gas produced from said brackish water;

an alkaline solution;

a source of power for providing an electrical current;

a gas diffusion anode adjacent to said gas receiving chamber having a gas interface in contact with said gaseous stream of impure hydrogen and an electrolyte interface in contact with said alkaline solution, wherein hydrogen from said gaseous stream of impure hydrogen is absorbed into said gas diffusion anode; and

an electrolytic cathode in contact with said alkaline solution adapted to receive said electrical current and to produce a supply of hydrogen upon receipt of said electrical current.

2. (Original) The apparatus of claim 1, further comprising means for collecting said hydrogen gas and means for collecting said oxygen gas.
3. (Original) The apparatus of claim 2, said means for collecting said hydrogen gas comprising a hydrogen gas conduit, said hydrogen gas conduit collecting said hydrogen gas and transporting said hydrogen gas to said reaction chamber, said means for collecting said oxygen gas comprising a oxygen gas conduit, said oxygen gas conduit collecting said oxygen gas and transporting said oxygen gas to said reaction chamber.
4. The apparatus of claim 1, said brackish water comprising ocean water.
5. The apparatus of claim 1, said electrical potential comprising at least 1.23 V.
6. (Cancelled)

7. (Cancelled)

8.(Currently Amended) The apparatus of claim [[7]] 1, said gas receiving chamber comprising: an input for receiving said gaseous stream of impure hydrogen; and an output for venting an outlet stream containing contaminants from said stream of impure hydrogen and hydrogen not absorbed by said gas diffusion anode.

9. (Original) The apparatus of claim 8, said outlet stream fed into a hydrogen separator adapted to separate said outlet stream into a hydrogen stream containing mostly hydrogen and a waste stream containing mostly contaminants.

10. (Original) The apparatus of claim 9, said hydrogen stream fed into said impure hydrogen stream and said waste stream is vented to the atmosphere or collected.

11. (Original) The apparatus of claim 1, said triple junction solar cell comprising a triple junction amorphous silicon solar cell.

12. (Original) The apparatus of claim 1, said reaction chamber having reaction chamber electrodes, said spontaneous reaction causing an electric potential to develop between said reaction chamber electrodes.

13. (Original) The apparatus of claim 12, said electric potential of said reaction chamber electrodes providing electrical energy to said brackish water.

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)